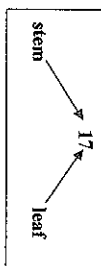


Stem and Leaf Plots Examples

1. A stem and leaf plot is a method used to organize statistical data. The greatest common place value of the data is used to form the stem. The next greatest common place value is used to form the leaves.



2. **EXAMPLE:** Make a stem and leaf plot of the algebra test scores given below. Then complete each question.

56, 65, 98, 82, 64, 71, 78, 77, 86, 95, 91, 59, 69, 70, 80, 92, 76, 82, 85, 91, 92, 99, 73

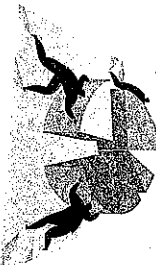
1st put the scores in numerical order.

56, 59, 64, 65, 69, 70, 71, 73, 76, 77, 78, 80, 82, 82, 85, 86, 91, 91, 92, 92, 95, 98, 99

Since the data range from 56 to 99, the stems range from 5 to 9. To plot the data, make a vertical list of the stems. Each number is assigned to the graph by pairing the units digit, or leaf, with the correct stem. The score 56 is plotted by placing the units digit, 6, to the right of stem 5.

Stem	Leaf
5	6 9
6	4 5 9
7	0 1 3 6 7 8
8	0 2 2 5 6
9	1 1 2 2 5 8 9

- What type of graph does a stem and leaf plot represent when turned vertically? **Histogram**
- What was the lowest score on the algebra test?
- What was the highest score on the algebra test?
- In which interval did most students score?



3. **EXAMPLE:** Make a stem and leaf plot of the history test scores given below. Then complete each question.

65, 82, 73, 91, 95, 86, 78, 69, 80, 88

1st put the scores in numerical order.

65, 69, 73, 78, 80, 82, 86, 88, 91, 95

Since the data range from 65 to 95, the stems range from 6 to 9. To plot the data, make a vertical list of the stems. Each number is assigned to the graph by pairing the units digit, or leaf, with the correct stem. The score 65 is plotted by placing the units digit, 5, to the right of stem 6.

Stem	Leaf
6	5 9
7	3 8
8	0 2 6 8
9	1 5

- What was the lowest score on the history test?
- What was the highest score on the history test?
- In which interval did most students score?
- Data with more than two digits can be rounded to two digits before plotting or can be truncated to two digits. To truncate means to cut off. For a stem and leaf plot, you would truncate everything after the second digit.

The number 355 would round to 36	355 → 36
The number 355 would truncate to 35	355 → 35

- To what does 389 round?
- To what does 389 truncate?

Name _____

Date _____ Block _____

5. A back-to-back stem and leaf plot is sometimes used to compare two sets of data or rounded and truncated values of the same data. In a back-to-back plot, the same stem is used for the leaves of both plots.

6. **EXAMPLE:** Estimated populations of counties in California are listed below. Make a back-to-back stem and leaf plot of the populations comparing rounded values and truncated values.

County	Pop. (thousands)	County	Pop (thousands)
Batte	149	San Bernardino	893
Contra Costa	657	San Francisco	679
Fresno	515	San Mateo	588
Kern	403	Santa Barbara	299
Martin	223	Santa Cruz	188
Sacramento	783	Sonoma	300

Put data into order.
Then round and truncate to two digits.

POPULATION IN THOUSANDS			
Normal	Rounded (2 digits)	Truncated (2 digits)	
149	15	14	
188	19	18	
223	22	22	
299	30	29	
300	30	30	
403	40	40	
515	52	51	
588	59	58	
657	66	65	
679	68	67	
783	78	78	
893	89	89	

Using rounded data,
212 represents
215,000 – 224,999
people

Rounded	Truncated
9 5 1	4 8
2 2	2 9
0 0 3	0
0 4	0
9 2 5	1 8
8 6 6	5 7
8 7	8
9 8	9

Using truncated data,
212 represents
220,000 – 229,999
people

7. **EXAMPLE:** The enrollments of several small colleges are listed below. Make a back-to-back stem and leaf plot of enrollments comparing rounded values and truncated values. Then answer each question

College	Enrollment
Miller Business School	1342
Capital College	1685
Para Professional Institute	1013
Parke College	2350
State Community	3781
Fashion Institute	1096
College of Art and Design	1960
Franklin Community College	3243

Put data into order.
Then round and truncate to two digits.

Enrollment		
Normal	Rounded (2 digits)	Truncated (2 digits)
1013	10	10
1096	11	10
1342	13	13
1685	17	16
1960	20	19
2350	24	23
3243	32	32
3781	38	37

Back-to-back stem and leaf plot

Rounded	Truncated
7 3 1 0	1 0 0 3 6 9
4 0 2	3
8 2 3	2 7

- a. What range of student enrollment is represented by 2.4?
b. What range of student enrollment is represented by 1.9?

Practice: Stem-and-Leaf Plots

The stem-and-leaf plot at the right shows the bowling scores for 20 bowlers. Use the plot for Exercises 1–3.

10	0	2	2	4	4	4
11	1	3	5	5	5	9
12	4	5	9	9		
13	0	6	8	8		

13 | 8 means 138

1. What numbers make up the stems?

2. What are the leaves for the stem 12?

3. Find the median, mode, and range.

Make a stem-and-leaf plot for each set of data. Then find the median, mode, and range.

4. 8 19 27 36 35 24 6 15 16 24 38 23 20

5. 8.6 9.1 7.4 6.3 8.2 9.0 7.5 7.9 6.3 8.1 7.1 8.2 7.0 9.6 9.9

6. 436 521 470 586 692 634 417 675 526 719 817

7. 17.9 20.4 18.6 19.5 17.6 18.5 17.4 18.5 19.4

The back-to-back stem-and-leaf plot at the right shows the high and low temperatures for a week in a certain city. Use this plot for Exercises 8–10.

Temperature		
Low		High
8 7	5	
4 3	6	5 9 9
2 1 0	7	2 5 6
	8	0
63 ←	3 6 2 →	62

8. Find the range for the high temperatures.

9. Find the median for the low temperatures.

10. Find the mode for the high temperatures.

11. Make a back-to-back stem-and-leaf plot for the following data. Find the median and mode for each set of data.

Set A: 75 82 79 80 75 76 83 74 75 86 80 71 75 _____

Set B: 71 73 75 80 79 80 74 80 74 79 76 80 81 _____